

Abstract of the Disclosure

An electromagnetic radiation source is provided which includes an anode and a cathode separated by an anode-cathode space. The source further includes electrical contacts for applying a dc voltage between the anode and the cathode and establishing an electric field across the anode-cathode space. At least one magnet is arranged to provide a dc magnetic field within the anode-cathode space generally normal to the electric field. A plurality of openings are formed along a surface of the anode which defines the anode-cathode space, whereby electrons emitted from the cathode are influenced by the electric and magnetic fields to follow a path through the anode-cathode space and pass in close proximity to the openings. A common resonator receives electromagnetic radiation induced in the openings as a result of the electrons passing in close proximity to the openings, and reflects the electromagnetic radiation back towards the openings to produce oscillating electric fields across each of the openings at a desired operating frequency.